WHAT IS CLAIMED IS:

1. A method for making optical fiber, the method comprising the steps of:

(a) forming a glass core rod by soot deposition, the glass core rod having a core region surrounded by a cladding region;

(b) dehydrating the glass core rod in a first atmosphere including at least one of oxygen, fluorine, fluorine-containing gases, chlorine, chlorine-containing gases and carbon monoxide, wherein the partial pressure of oxygen is controllable;

(c) consolidating the glass core rod;

(d) drawing fiber from the optical fiber preform;

(e) exposing at least one portion of the drawn optical fiber to hydrogen to prematurely age the at least one portion of the drawn optical fiber;

(f) measuring the transmission loss over an operable wavelength range of the aged portion of optical fiber;

(g) adjusting, based on the measured transmission loss, the partial pressure of the oxygen in the first atmosphere to reduce the transmission loss associated with hydrogen aging; and

(h) repeating at least steps (a) through (d).

2. The method as recited in claim 1, further comprising the step of forming an overclad region around the glass core rod to form an overclad optical fiber preform, and wherein the fiber drawing step further comprises drawing fiber from the overclad optical fiber preform.

3. The method as recited in claim 2, wherein the overclad forming step further comprises the steps of:

depositing soot around the glass core rod;

dehydrating the deposited soot in a second atmosphere including at least one of oxygen, fluorine, fluorine-containing gases, chlorine, chlorine-containing gases and carbon monoxide, wherein the partial pressure of oxygen in the second atmosphere is controllable; and

consolidating the deposited soot around the glass core rod.

4. The method as recited in claim 3, further comprising the step of adjusting, based on the measured transmission loss, the partial pressure of oxygen in the second atmosphere during the overclad forming step.

5. The method as recited in claim 2, wherein the soot deposition in the overclad forming step is selected from the group consisting of vapor axial deposition and outside vapor deposition.

6. [RIT overclad] The method as recited in claim 2, wherein the overclad forming step further comprises the steps of:

positioning an overclad tube around the glass core rod; and

heating the overclad tube along the length thereof in such a way that the overclad tube collapses onto the glass core rod to form the overclad optical fiber preform.

7. The method as recited in claim 1, wherein the exposing step further comprises exposing the at least one portion of the drawn optical fiber to a 1% hydrogen environment at room temperature for a period of time of approximately 4 to 6 days.

8. The method as recited in claim 1, wherein the soot deposition in the glass core rod formation step is selected from the group consisting of vapor axial deposition and outside vapor deposition.

9. A method for making optical fiber, the method comprising the steps of:

(a) forming a glass core rod having a core region surrounded by a cladding region in a first atmosphere;

(b) forming an overclad region around the glass core rod to form an overclad optical fiber preform,

wherein the overclad region forming step includes depositing soot around the glass core rod, dehydrating the deposited soot in a second atmosphere including at least one of oxygen, fluorine, fluorine-containing gases, chlorine, chlorine-containing

gases and carbon monoxide, wherein the partial pressure of oxygen is controllable, and consolidating the deposited soot around the glass core rod;

(c) drawing fiber from the overclad optical fiber preform;

(d) exposing at least one portion of the drawn optical fiber to hydrogen to prematurely age the at least one portion of the drawn optical fiber;

(e) measuring the transmission loss over an operable wavelength region of the aged portion of optical fiber;

(f) adjusting, based on the measured transmission loss, the partial pressure of the second atmosphere to reduce the transmission loss associated with hydrogen aging; and

(g) repeating at least steps (a) through (c).

10. The method as recited in claim 9, wherein the exposing step further comprises exposing the at least one portion of the drawn optical fiber to a 1% hydrogen environment at room temperature for a period of time of approximately 4 to 6 days.

11. The method as recited in claim 9, wherein the glass core rod formation step further comprises soot deposition.

12. The method as recited in claim 11, wherein the soot deposition in the glass core rod formation step is selected from the group consisting of vapor axial deposition and outside vapor deposition.

13. The method as recited in claim 1, wherein the glass core rod formation step includes the steps of dehydrating the glass core rod in the first atmosphere, wherein the first atmosphere includes at least one of oxygen, fluorine, fluorine-containing gases, chlorine, chlorine-containing gases and carbon monoxide.

14. The method as recited in claim 13, wherein the partial pressure of oxygen in the first atmosphere during the glass core rod formation step is controllable, and wherein the method further comprises the step of adjusting, based on the measured

transmission loss, the partial pressure of oxygen in the first atmosphere during the glass rod formation step.

15. The method as recited in claim 1, wherein the soot is deposited around the glass core rod by one of vapor axial deposition vapor axial deposition and outside vapor deposition.

16. A method for making optical fiber, the method comprising the steps of:

forming a glass core rod having a core region surrounded by a cladding region in a first atmosphere;

forming an overclad region around the glass core rod to form an overclad optical fiber preform;

drawing fiber from the overclad optical fiber preform,

wherein at least one of the glass core rod formation and the overclad region formation steps is performed by soot deposition, wherein the soot deposition includes dehydrating deposited soot in a second atmosphere including at least one of oxygen, fluorine, fluorine-containing gases, chlorine, chlorine-containing gases and carbon monoxide, wherein the partial pressure of oxygen therein is controlled in such a way that the optical fiber drawn from the overclad optical fiber preform has a transmission loss at 1385 nanometers that is less than 0.33 dB/km and the change in transmission loss thereafter is less than 0.05 dB/km.

17. The method as recited in claim 16, wherein the glass rod forming step includes adjusting the partial pressure of oxygen in the first atmosphere.

18. The method as recited in claim 16, wherein the overclad region forming step includes adjusting the partial pressure of oxygen in the second atmosphere.

19. The method as recited in claim 16, wherein the soot deposition in the glass core rod formation step is selected from the group consisting of vapor axial deposition and outside vapor deposition.

20. The method as recited in claim 16, wherein the soot deposition in the overclad region forming step is selected from the group consisting of vapor axial deposition and outside vapor deposition.

21. An optical waveguide system for transmitting optical energy, comprising:

at least one source of optical energy;

at least one optical fiber coupled to the source for transmitting optical energy from the source; and

a receiver coupled to the at least one optical fiber for receiving optical energy from the source,

wherein the at least one optical fiber has a transmission loss less at 1385 nanometers that is less than 0.33 dB/km and the change in transmission loss thereafter is less than 0.05 dB/km.